

IN THE ABSTRACT

Please substitute the Abstract with the following replacement Abstract. A marked-up version of the Abstract, showing the changes made thereto, is attached.

A₁ --A method of raising the printing speed of an image printing device when time-division drive is performed, utilizes time-division drive using four times divisions. Image data is read out of the editing buffer of a RAM in regular order, in the form of a staircase, four dots at a time, and the image data is rearranged in the form of a staircase of eight dots in a print buffer within the same RAM. This makes it possible to transmit data from the RAM to a printhead one byte at a time in an efficient manner.--

IN THE CLAIMS

Please amend Claims 1-3, 5-9, 12, and 14, and add Claims 17 and 18, to read as follows (a version of the amended claims, marked to show the changes, is appended):

5.5 B₁ } 1. (Amended) A data processing method for processing data stored in storage means in an image printing apparatus subjected to time-division drive of a printhead, comprising a step of:

A₂ rearranging one word of data corresponding to a plurality of contiguous print elements provided on the printhead, that is stored divisionally in two or more address regions in the storage means, to store the data in one address region in the storage means.

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2. (Amended) A data processing apparatus for processing data stored in storage means in an image printing apparatus subjected to time-division drive of a printhead, wherein one word of data corresponding to a plurality of contiguous print elements provided on the printhead, that is stored divisionally in two or more address regions within the storage means, is rearranged in one address region within the storage means.

3. (Amended) The apparatus according to claim 2, further comprising:
delay means for delaying a set of data that corresponds to contiguous print elements, a number of which is a whole-number multiple of a number of time divisions employed in time-division drive, said delayed data being from the data that has been read out of said storage means.

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5. (Amended) An image printing apparatus subjected to time-division drive in which n represents the number of time divisions and one word is composed of m bits, comprising:

data processing means for reading n -bit data corresponding to n contiguous nozzles serves as one unit and storing contiguous 1-bit data, where the lowest common multiple of n and m is 1, in one address within a print buffer.

6. (Amended) An image printing apparatus for processing data in which one word consists of eight bits, comprising:

printhead driving means for discharging ink from four contiguous nozzles of a printhead at different timings;

a print buffer for outputting image data to said printhead driving means; and

data transfer means for transferring data to said print buffer;

A3 said data transfer means rearranging sets of 4-bit data, each set of which corresponds to four contiguous nozzles of the printhead, in such a manner that two sets of data are stored in one address within said print buffer as 8-bit data.

7. (Amended) An image printing apparatus subjected to time-division drive, comprising:

storage means for storing image data;

a printhead for performing printing based upon the image data read out of said storage means; and

means for reading image data from two or more address regions within said storage means, which will be printed by driving said printhead one time, and packing the image data in numbers of bits serving as units in which data is read from and written to said storage means to store the packed image data in one address region within said storage means, before the image data is transmitted to said printhead.

8. (Amended) A method of controlling an image printing apparatus subjected to time-division drive and having storage means for storing image data and a

printhead for performing printing based upon the image data read out of said storage means, said method comprising a step of:

reading image data from two or more address regions within said storage means, which will be printed by driving said printhead one time; and, packing the image data in numbers of bits serving as units in which data is read from and written to said storage means to store the packed image data in one address region within said storage means, before the image data is transmitted to said printhead.

9. (Amended) A computer-readable memory storing a control program for controlling an image printing apparatus subjected to time-division drive and having storage means for storing image data and a printhead for performing printing based upon the image data read out of said storage means, said control program being a program for:

reading image data from two or more address regions within said storage means, which will be printed by driving said printhead one time; and,

packing the image data in numbers of bits serving as units in which data is read from and written to said storage means to store the packed image data in one address region within said storage means before the image data is transmitted to said printhead.

12. (Amended) A data processing method for processing data stored in a print buffer in an image printing apparatus which performs printing by causing a printhead to scan, said printhead having a plurality of print elements arrayed at

predetermined angles with respect to the scanning direction of the printhead and subjected to time-division drive, comprising a step of:

rearranging one word of data corresponding to a plurality of contiguous print elements provided on the printhead, that is stored in two or more address regions in the storage means, to store the data in one address region in the storage means.

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14. (amended) A data processing apparatus for processing data stored in a print buffer in an image printing apparatus which performs printing by causing a printhead to scan, said printhead having a plurality of print elements arrayed at predetermined angles with respect to the scanning direction of the printhead and subjected to time-division drive, wherein one word of data corresponding to a plurality of contiguous print elements provided on the printhead, that is stored divisionally in two or more address regions within the storage means, is rearranged in one address region within the storage means.

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Please add Claims 17 and 18 to read as follows:

17. (New) The apparatus according to claim 2, wherein said storage means includes an editing buffer and a print buffer, and wherein the one word of data stored in two or more address regions within the editing buffer is rearranged in one address region within the print buffer.

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18. (New) The apparatus according to claim 2, comprising: